

# INTEP TIONAL SEARCH REPORT

Int. tional Application No  
PCT/US2004/013735

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04L27/34 H04L27/38 H04L1/00 H04L25/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ✓	TARICCO G ET AL: "Some simple coded-modulation schemes for unequal error protection in satellite communications" SPREAD SPECTRUM TECHNIQUES AND APPLICATIONS PROCEEDINGS, 1996., IEEE 4TH INTERNATIONAL SYMPOSIUM ON MAINZ, GERMANY 22-25 SEPT. 1996, NEW YORK, NY, USA, IEEE, US, 22 September 1996 (1996-09-22), pages 1288-1294, XP010208825 ISBN: 0-7803-3567-8	1-3, 5, 14, 15, 18, 19
Y	Sections II and III  figure 1  -----  -/--	4, 6, 16, 17

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
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- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

14 February 2005

Date of mailing of the international search report

17. 03. 05

Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/013735

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y ✓	DIVSALAR D ET AL: "Multiple turbo codes" MILITARY COMMUNICATIONS CONFERENCE, 1995. MILCOM '95, CONFERENCE RECORD, IEEE SAN DIEGO, CA, USA 5-8 NOV. 1995, NEW YORK, NY, USA, IEEE, US, 5 November 1995 (1995-11-05), pages 279-285, XP010153973 ISBN: 0-7803-2489-7 page 283, left-hand column, paragraph 1 Section IX	4,17
Y ✓	US 5 657 354 A (THESLING III WILLIAM H ET AL) 12 August 1997 (1997-08-12) column 3, line 58 - line 67	6,12,13, 16
A ✓	CALDERBANK A R: "Multilevel codes and multistage decoding" IEEE TRANSACTIONS ON COMMUNICATIONS, vol. 37, no. 3, March 1989 (1989-03), pages 222-229, XP002304039 Section III-A	1-6, 14-19
A ✓	KANNAN RAMCHANDRAN: "MULTIRESOLUTION BROADCAST FOR DIGITAL HDTV USING JOINT SOURCE/ CHANNEL CODING" IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, IEEE INC. NEW YORK, US, vol. 11, no. 1, 1993, pages 6-22, XP000377993 ISSN: 0733-8716 figure 6b	1-6, 14-19
X	LIM J-H ET AL: "Labeling and decoding schemes for backward-compatible hierarchical coded modulation" 2000 IEEE WIRELESS COMMUNICATIONS AND NETWORKING CONFERENCE. CONFERENCE RECORD, vol. 1, 23 September 2000 (2000-09-23), pages 123-128, XP010532479	10,11
Y	page 123, right-hand column, paragraph 2 figure 3a	12,13
X	SCHILPP M ET AL: "Multilevel codes for digital HDTV" COMMUNICATION TECHNOLOGY PROCEEDINGS, 1996. ICCT'96., 1996 INTERNATIONAL CONFERENCE ON BEIJING, CHINA 5-7 MAY 1996, NEW YORK, NY, USA, IEEE, US, 5 May 1996 (1996-05-05), pages 771-776, XP010532925 ISBN: 0-7803-2916-3 figure 1b page 773, left-hand column, last paragraph sections II-A, II-B	10,11
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Int. J. Application No  
PCT/US2004/013735

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>SCHRAMM P: "Multilevel coding with independent decoding on levels for efficient communication on static and interleaved fading channels" PERSONAL, INDOOR AND MOBILE RADIO COMMUNICATIONS, 1997. WAVES OF THE YEAR 2000. PIMRC '97., THE 8TH IEEE INTERNATIONAL SYMPOSIUM ON HELSINKI, FINLAND 1-4 SEPT. 1997, NEW YORK, NY, USA, IEEE, US, 1 September 1997 (1997-09-01), pages 1196-1200, XP010247636 ISBN: 0-7803-3871-5 figure 4</p>	10-13
A	<p>PAPKE L ET AL: "Different iterative decoding algorithms for combined concatenated coding and multiresolution modulation" COMMUNICATIONS, 1994. ICC '94, SUPERCOMM/ICC '94, CONFERENCE RECORD, 'SERVING HUMANITY THROUGH COMMUNICATIONS.' IEEE INTERNATIONAL CONFERENCE ON NEW ORLEANS, LA, USA 1-5 MAY 1994, NEW YORK, NY, USA, IEEE, 1 May 1994 (1994-05-01), pages 1249-1254, XP010126691 ISBN: 0-7803-1825-0 section 3.1</p>	10-13
A	<p>US 5 983 174 A (WONG ET AL) → 9 November 1999 (1999-11-09) column 1, line 20 - line 36 column 10, line 28 - column 11, line 25</p>	7-9

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/013735

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		CA 2233980 A1	17-04-1997
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